

1. A method of operating a communication system comprising:

establishing an Internet Protocol (IP) route through an IP system between a first route processor and a second route processor;

in the first route processor, receiving a first registration message from a first user
5 where the first registration message has a first address as a first registration message source address and a second address as a first registration message destination address, processing the first registration message to change the first address to a third address and to change the second address to a fourth address, and transferring the first registration message;

in the second route processor, receiving a second registration message from a second user where the second registration message has a fifth address as a second registration message source address and a sixth address as a second registration message destination address, processing the second registration message to change the fifth address to a seventh address and to change the sixth address to the fourth address, and transferring the second registration message;

15 in the soft switch, receiving and processing the first registration message to register the first user at the third address and receiving and processing the second registration message to register the second user at the seventh address;

in the first route processor, receiving a first request message from the first user where the request message requests a session with the second user and has the first address as a first request message source address and the second address as a first request message destination address, processing the first request message to change the first address to the third address and to change the second address to the fourth address, and transferring the first request message;

in the soft switch, receiving and processing the first request message to transfer a first response message that associates the second user with the seventh address and has the fourth address as a first response message source address and the third address as a first response message destination address;

5 in the first route processor, receiving and processing the first response message to change the fourth address to the second address and to change the third address to the first address, and transferring the first response message to the first user;

10 in the first route processor, receiving a second request message from the first user where the second request message has the first address as a second request message source address and the seventh address as a second request message destination address, processing the second request message to change the first address to the third address, and transferring the second request message;

 in the second route processor, receiving and processing the second request message to change the seventh address to the fifth address and transferring the second request message;

15 in the second route processor, receiving and processing a second response message from the second user where the second response message has the fifth address as a second response message source address and the third address as a second response message destination address, processing the second response message to change the fifth address to the seventh address, and transferring the second response message;

20 in the first route processor, receiving and processing the second response message to change the third address to the first address, and transferring the second response message;

 in the first route processor, receiving a first data message from the first user where the first data message has the first address as a first data message source address and the seventh

address as a first data message destination address, processing the first data message to change the first address to the third address, and transferring the first data message over the IP route;

5 in the second route processor, receiving and processing the first data message to change the seventh address to the fifth address and transferring the first data message;

10 in the second route processor, receiving and processing a second data message from the second user where the second data message has the fifth address as a second data message source address and the third address as a second data message destination address, processing the second data message to change the fifth address to the seventh address, and transferring the second data message over the IP route;

15 in the first route processor, receiving and processing the second data message to change the third address to the first address, and transferring the second data message; and

in the first route processor and the second route processor, monitoring performance of the IP route.

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2. The method of claim 1 wherein the registration messages, the request messages, and the response messages comprise Session Initiation Protocol messages.

20 3. The method of claim 1 wherein the registration messages, the request messages, and the response messages comprise H.323 messages.

4. The method of claim 1 wherein the data messages comprise Real-Time Protocol messages.

5. The method of claim 1 wherein the IP route comprises a Resource Reservation Protocol tunnel.
6. The method of claim 1 wherein monitoring the performance of the IP route comprises
5 monitoring packet delay.
7. The method of claim 1 further comprising establishing another IP route through the IP system between the first route processor and the second route processor and using the other IP route for subsequent data transfer between the first route processor and the second route
10 processor based on the monitored performance of the first IP route.
8. The method of claim 1 further comprising transferring information indicating performance of the IP route from the first route processor and the second route processor to a route manager.

9. A method of operating a communication system comprising:

establishing an Internet Protocol (IP) route through an IP system between a first route processor and a second route processor;

in the first route processor, receiving a first data message from a first user where the first data message has a first address as a first data message source address and a seventh address as a first data message destination address, processing the first data message to change the first address to a third address, and transferring the first data message over the IP route;

in the second route processor, receiving and processing the first data message to change the seventh address to a fifth address and transferring the first data message;

in the first route processor and the second route processor, monitoring performance of the IP route.

10. The method of claim 9 further comprising:

15 in the second route processor, receiving and processing a second data message from the second user where the second data message has the fifth address as a second data message source address and the third address as a second data message destination address, processing the second data message to change the fifth address to the seventh address, and transferring the second data message over the IP route; and

20 in the first route processor, receiving and processing the second data message to change the third address to the first address, and transferring the second data message.

11. The method of claim 9 further comprising:

in the first route processor, receiving a first registration message from the first user where the first registration message has the first address as a first registration message source address and a second address as a first registration message destination address, processing
5 the first registration message to change the first address to the third address and to change the second address to a fourth address, and transferring the first registration message;

in a soft switch, receiving and processing the first registration message to register the first user at the third address.

10 12. The method of claim 9 further comprising:

in the second route processor, receiving a second registration message from the second user where the second registration message has the fifth address as a second registration message source address and a sixth address as a second registration message destination address, processing the second registration message to change the fifth address to the seventh address and to change the sixth address to a fourth address, and transferring the second registration message;
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in a soft switch, receiving and processing the second registration message to register the second user at the seventh address;

in the first route processor, receiving a first request message from the first user where
20 the request message requests a session with the second user and has the first address as a first request message source address and a second address as a first request message destination address, processing the first request message to change the first address to the third address

and to change the second address to the fourth address, and transferring the first request message;

in a soft switch, receiving and processing the first request message to transfer a first response message that associates the second user with the seventh address and has the fourth address as a first response message source address and the third address as a first response message destination address;

in the first route processor, receiving and processing the first response message to change the fourth address to the second address and to change the third address to the first address, and transferring the first response message to the first user;

10 in the first route processor, receiving a second request message from the first user where the second request message has the first address as a second request message source address and the seventh address as a second request message destination address, processing the second request message to change the first address to the third address, and transferring the second request message;

15 in the second route processor, receiving and processing the second request message to change the seventh address to the fifth address and transferring the second request message;

in the second route processor, receiving and processing a second response message from the second user where the second response message has the fifth address as a second response message source address and the third address as a second response message destination address, processing the second response message to change the fifth address to the seventh address, and transferring the second response message; and

in the first route processor, receiving and processing the second response message to change the third address to the first address, and transferring the second response message.

13. A method of operating a communication system for users wherein the communication system includes route processors, an Internet Protocol (IP) network, and a soft switch, the method comprising:

establishing IP routes between the route processors through the IP network;

5 in the route processors, changing signaling message addresses in signaling messages that are transferred between the users and the soft switch to direct the signaling messages through the route processors;

 in the route processors, changing data message addresses in data messages that are transferred between the users to direct the data messages through the route processors;

10 transferring the data messages between the route processors over the IP routes; and

 in the route processors, monitoring performance of the IP routes.

15. The method of claim 13 wherein the signaling messages comprise Session Initiation Protocol messages.

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15. The method of claim 13 wherein the signaling messages comprise H.323 messages.

16. The method of claim 13 wherein the data messages comprise Real-Time Protocol messages.

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17. The method of claim 13 wherein the IP routes comprises Resource Reservation Protocol tunnels.

18. The method of claim 13 wherein monitoring the performance of the IP routes comprises monitoring packet delay.

19. The method of claim 13 further comprising selecting ones of the IP routes to use based on
5 the monitored performance of the IP routes.

20. The method of claim 13 further comprising transferring information indicating performance of the IP routes from the route processors to a route manager.